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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/541,452	03/31/2000	Mark D Amundson	279.152US1	3682

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EXAMINER
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OROPEZA, FRANCES P

ART UNIT	PAPER NUMBER
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3762

DATE MAILED: 12/19/2003

213

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/541,452

Applicant(s)

AMUNDSON ET AL.

Examiner

Frances P. Oropeza

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10/24/03 (Appeal).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2,6,8-11,13-15,23-26 and 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,6,8-11,13-15,23-26 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Appeal Brief***

1. The Applicant's arguments filed 10/24/03 have been fully considered and are convincing. The rejection of record is withdrawn and a new grounds of rejection established in the subsequent paragraphs.

***Claim Rejections - 35 USC § 103***

2. Claims 2, 6, 8-11, 13, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brownlee et al. (US 4134408) in view of Silvian (US 6301504) and further in view of Donders et al. (US 6115634).

Brownlee et al. disclose an external multi-loop large-diameter telemetry coil, the conductive wire of the telemetry coil wound in a substantially common plane, coupled by telemetry to a receiving coil of an implantable device. The external telemetry coil is housed within a bed or chair. The coil made of known coated and insulating materials that conform to irregular surfaces of the body yet has shape retention. The bed or chair is flexible based on the materials of construction, and the bed or chair surrounds the telemetry coil, hence providing a flexible housing for the coil. Sheets and a mattress pad are read to supply the padded cover disposed over the housing. The outer dimension of the external telemetry coil is read to be a diameter in the range of fifteen (15) to forty-six (46) centimeters (approximately six to eighteen inches). (figures 3b and 3c; col. 2 @ 10-21; col. 4 @ 32-37; col. 5 @ 55-65).

Brownlee et al. disclose the claimed invention except for a magnetically permeable core surrounded by the telemetry coil (claims 15 and 6).

Silvian discloses a high-speed telemetry system with a transmit coil (22) and a receive coil (30) and teaches the use of a ferrite core (ferrite is known to be a powdered magnetic material consisting chiefly of ferric oxide) to support high transmission rates. It would have been obvious to one having ordinary skill in the art at the time of the invention to have used the ferrite core in the Brownlee et al. system in order enable high transmission rates so data can be transferred without significant error while preserving the limited power resources of the implanted device (col. 1 @ 50-55; col. 6 @ 55-58; col. 9 @ 39-42).

Modified Brownlee et al. disclose the claimed invention except for the loops of the around the core being positioned to form a substantially constant gap between adjacent loops (claim 15).

Donners et al. teach telemetry coil spacing using equally spaced telemetry coils with a substantially constant gap for the purpose optimizing the telemetry communications. It would have been obvious to one having ordinary skill in the art at the time of the invention to have used equally spaced telemetry loops/ coils with a substantially constant gap in the modified Brownlee et al. system in order to use a proven antenna configuration to efficiently download and up-link communication between the implanted device and the external programmer, hence creating energy efficient transmissions to optimize the life of the implanted device energy supply and providing a rapid data transmission rate to optimize the time of the attending doctor (abstract; col. 3 @ 41-51; col. 4 @ 17-28).

3. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weijand (US 6298271) in view of Silvian (US 6301504) and further in view of Donders et al.

(US 6115634).

Weijand discloses a medical system having improved telemetry. A first (1) and second (2) telemetry coil concentrically planarly wound substantially in a common plane communicates with the implanted medical device antenna (30) using RF signals (figure 2; col. 2 @ 38-39; col. 4 @ 7-13). It is inherent this communication is inductive. The communication lead has a first and second end; the first end is connected to the telemetry coils and the second end is connected to the programmer (figure 1A; col. 2 @ 30-38). The first and second telemetry coils include one or more loops of a conductive wire (col. 3 @ 36-64). The one or more loops of the conductive wire are concentrically wound in a common plane (col. 3 @ 36-64; col. 4 @ 11-14).

Weijand discloses the claimed invention except for a magnetically permeable core surrounded by the telemetry coil.

Silvian discloses a high-speed telemetry system with a transmit coil (22) and a receive coil (30) and teaches the use of a ferrite core (ferrite is known to be a powdered magnetic material consisting chiefly of ferric oxide) to support high transmission rates (col. 6 @ 55-58; col. 9 @ 39-42). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the medical system having improved telemetry as taught by Weijand, with the ferrite core as taught by Silvian to provide a coil configuration that will enable high transmission rates so data can be transferred without significant error while preserving the limited power resources of the implanted device (col. 1 @ 50-55).

Modified Weijand discloses the claimed invention except for the loops of the around the core being positioned to form a substantially constant gap between adjacent loops.

Donners et al. teach telemetry coil spacing using equally spaced telemetry coils with a substantially constant gap for the purpose optimizing the telemetry communications. It would have been obvious to one having ordinary skill in the art at the time of the invention to have used equally spaced telemetry loops/ coils with a substantially constant gap in the modified Brownlee et al. system in order to use a proven antenna configuration to efficiently download and up-link communication between the implanted device and the external programmer, hence creating energy efficient transmissions to optimize the life of the implanted device energy supply and providing a rapid data transmission rate to optimize the time of the attending doctor (abstract; col. 3 @ 41-51; col. 4 @ 17-28).

4. Claims 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weijand (US 6298271) in view of Silvian (US 6301504) and further in view of Donders et al. (US 6115634) and further in view of Kung (US 6400991). As discussed in paragraph 3 of this action, modified Weijand discloses the claimed invention except for the outer dimension of the first and second telemetry coils being a diameter in a range of fifteen (15) to forty-six (46) centimeters.

Kung discloses an electromagnetic field source with two primary coils and teaches that the size of the coil is dependent on how much current you want to induce in the implanted device coils. Hence, it would be obvious to provide external telemetry coils where the outer dimension of the first and second coils is a diameter in a range of fifteen (15) to forty-six (46) centimeters to enable communication at an appropriate current level with the implanted device. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was

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made to modify the modified medical system having improved telemetry as taught by modified Weijand, with the outer dimension of the first and second telemetry coils being a diameter in a range of fifteen (15) to forty-six (46) centimeters as taught by Kung to enable effective and efficient communication of energy between the external device and the implanted device (col. 3 @ 13-36).

5. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weijand (US 6298271) in view of Silvian (US 6301504) and further in view of Donders et al. (US 6115634) and further in view of Zarinetchi et al (US 6389318). As discussed in paragraph 3 of this action, modified Weijand discloses the claimed invention except for providing a flexible, insulated housing for the external telemetry coil that will conform to an irregular surface to enable the device to mate with the patient's body.

Zarinetchi et al. disclose a transcutaneous energy transfer device and teach that it is known to provide a flexible insulated housing for the primary coil that will conform to an irregular surface. The padded cushions (712 and 750) are read to be disposed over the housing (col. 4 @ 59-65; col. 6 @ 56 – col. 7 @ 29; figures 7A & 7B). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the modified medical system having improved telemetry as taught by modified Weijand, with the insulated housing for the external telemetry coil that conforms to an irregular surface as taught by Zarinetchi et al. to enable the device to mate with the patient's body so a comfortable and effective interface with the patient is provided (c 6, ll 57-61).

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weijand (US 6298271) in view of Stokes et al. (US 5814089).

Weijand discloses a medical system having improved telemetry. A first (1) and second (2) telemetry coil concentrically planarly wound substantially in a common plane communicates with the implanted medical device antenna (30) using RF signals (figure 2; col. 2 @ 38-39; col. 4 @ 7-13). It is inherent this communication is inductive. The communication lead has a first and second end; the first end is connected to the telemetry coils and the second end is connected to the programmer (figure 1A and col. 2 @ 30-38). The first and second telemetry coils include one or more loops of a conductive wire (col. 3 @ 36-64). The loops of the conductive wire are concentrically wound in a common plane (col. 3 @ 36-64; col. 4 @ 11-14).

Weijand discloses the claimed invention except for the second telemetry coil being arranged and operated at a different telemetry operational frequency than the first telemetry coil.

Stokes et al. discloses a single and multi-antenna transmitter (37) and teaches using different operating frequencies for different antennas for the purpose of optimizing the telemetry transmission of power and data. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the medical system having improved telemetry as taught by Weijand, with the use of different operating frequencies as taught by Stokes et al. to enable simultaneous sending of optimized telemetry signals while optimizing the power efficiency of the communication system (abstract; col. 2 @ 11-37; col. 4 @ 33-46; col. 5 @ 8-31).



***Statutory Basis***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Fran Oropeza whose telephone number is (703) 605-4355. The Examiner can normally be reached on Monday – Thursday from 6 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Angela D. Sykes can be reached on (703) 308-5181. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-4520 for regular communication and (703) 306-4520 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0858.

Frances P. Oropeza  
Patent Examiner  
Art Unit 3762

*FO*  
12/13/03

*Angela D. Sykes*

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